



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/002,141

12/05/2001

Alexander Beeck

033275-316

3862

7590 08/08/2008  
Robert S. Swecker  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

EXAMINER

WIEHE, NATHANIEL EDWARD

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

08/08/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 18 June 2008 have been fully considered but they are not persuasive.

Firstly, the previous office action included a typographical error. Specifically, claims 6,13 and 22-28 were indicated as pending. As indicated by applicant claims 3,16 and 22-28 were in fact pending. Any inconvenience to applicant or applicant's representative is deeply regretted.

Applicant asserts that Yamarik et al. does not anticipate the claimed invention. The examiner respectfully disagrees. Firstly, applicant states, "claim 16 require a component having a construction which includes both "a second passage" as well as a "dust discharge aperture"". On the contrary, the claim expressly requires that the "second passage comprises a dust discharge aperture". Thus, the second passage and the dust discharge aperture constitute the same element, as claimed. Secondly, applicant asserts that the tip cooling holes/passage of Yamarik et al. are not inherently dimensioned and oriented so as to allow the introduction of a borescope there through. However, the examiner maintains that the cooling holes do not need to be resized so as to allow insertion of a borescope. This point is further evidenced by De 19801804, which clearly shows that borescopes are capable of fitting into/through standard/typical cooling holes of turbine blades. Thus, the cooling holes/passage of Yamarik et al. inherently discloses the claim limitation. Further, the examiner disagrees with the applicant's interpretation of the flow paths of Yamarik et al. Applicant contends that the

"tip passage 65 is not tangential" to the curved flow path of Yamarik et al. Yamarik et al. clearly shows a curved flow path (the arrow along the lower surface of guide vane (54)) and a further flow path (the arrow above the guide vane) that clearly extends tangentially to the curved path and straight backward leading into the passage (56). Further, the arrangement of walls/passages in Yamarik et al. is substantially identical to that disclosed by applicant, referring to Fig. 2.

In regard to claim 24, Yamarik et al. does include a "straight line of sight from the duct discharger aperture through the second passage to the first portion of the third wall." At least in as much as a portion of the leading edge wall (i.e. third wall) is viewable over the guide vane from the passage.

In regard to claim 26, the blade of Yamarik et al. inherently operates in the manner claimed by applicant. Specifically, the dirt particles would be driven outwardly by the large centrifugal forces, created by rotation of the turbine, and entrained into the flow path heading above the guide vane and into the dust discharger aperture. Although, the main flow traveling through passage 56 is directed around and downward into the second passageway by the guide vane, one can not conclude that a *significant portion* of the particles are also so directed. Specifically, due to their significantly larger relative mass, the particles would be directed outward and thus a significant portion would be entrained into the upper flow path and not directed into the second section.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3745

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3,16 and 22-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamarik et al. (4,278,400), hereinafter “Yamarik”. Yamarik discloses a rotating blade (of a turbine having a coolant passage with a curved flow section (36,38) in a first flow direction and a second passage (56) parallel to the axis of the turbine and branching off the coolant passage at tangentially to the curved flow section. The second passage is arranged in the neighborhood of the blade tip and extends to the trailing edge of the blade. Further, the second passage is capable of both acting as a dust discharge aperture, due to its tangential relationship with the curved passage and its radially outward location, as well as allowing for the introduction of a borescope therethrough. The second passage (58) acts as a dust removal passage due to the inertial effects of the rotation of the blades on the relatively high mass dust particles separating these particles in the curved flow section while the main coolant flow turns radially inward to the second section. Further, Yamarik’s blade includes a first section (36) which flow toward the curved flow section, a second passage (58) flowing tangentially away from the curved section, and a second section (26) flowing away from the curved section. A first wall (34) defined the first and second sections. A second wall includes a first portion (22) defining the first section and a second portion (16) defining the second passage (56). A third wall includes a first portion (28) defining the second section and parallel to the first wall (34) and a second portion defining the second passage.

Additionally, there would be a straight line of sight through the second passage to the second section (16) of the second wall.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL WIEHE whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHAN WIEHE/  
Nathan Wiehe  
Examiner  
Art Unit 3745

/Edward K. Look/  
Supervisory Patent Examiner, Art Unit 3745